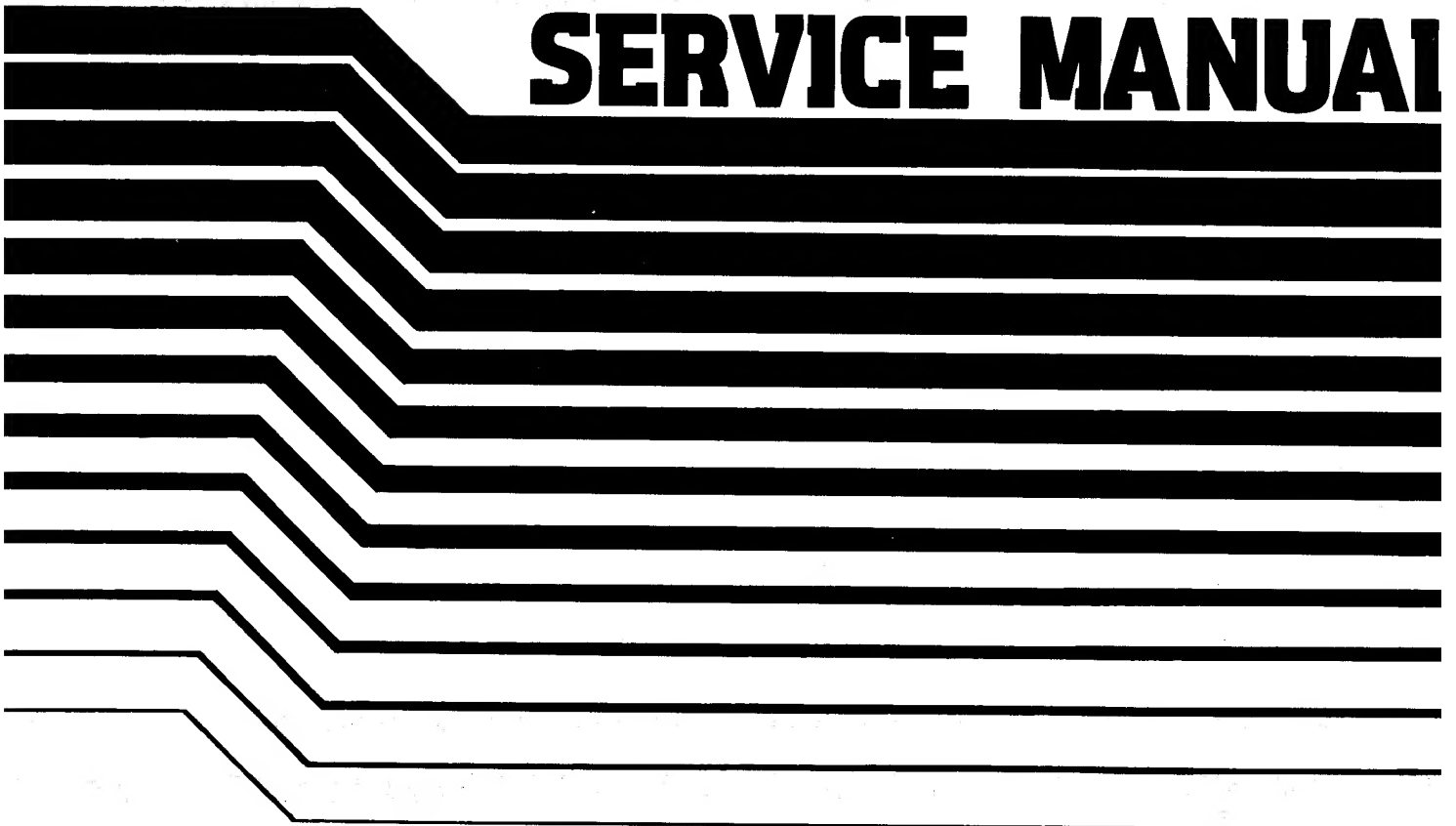




MODEL SB-002U

SERVICE MANUAL



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1. SPECIFICATIONS








Power Source	Single-phase 50/60Hz A.C. 240, 220, 117, 110 or 100V (all within $\pm 10\%$)
Wattage	120W (at 100V)
Coin Operate	1 to 6 games per 1 coin; 1 to 4 coins for 1 game
Coin Capacitance	3,000 coins (¥100 coin)
Dimensions;	
Width	620 mm
Depth	800 mm
Height	1,700 mm
CRT monitor	20" color CRT with smoke mask
Power Cord	Triple captyre/ 3 m in length

2. INSTALLATION

- (1) Install the machine on a flat floor.
- (2) Avoid locations subjected to direct sunlight, high temperature, high humidity, vigorous vibrations, dust, etc. Also avoid locations where dangerous objects or fire-fighting apparatuses are stored or which block the emergency exit.
- (3) Don't give any shock or vibrations to the machine.
- (4) Don't allow any metal objects to fall into or water to get into the cabinet.
- (5) When applying voltage on the machine, do not use the same wall outlet as the one for motors, air conditioners, etc. which tend to fluctuate the voltage of the machine or to produce noise.
- (6) The line voltage that may be selected is as follows: single-phase 50/60 Hz A.C. 240, 220, 117, 110 or 100V. Connect the plug to the socket which is fitted your local voltage. This Voltage Selection Connectors are located on Power-Transformer.

3. PLAY INSTRUCTIONS

- ★ After coin inserted, press either 1 or 2 PLAYERS BUTTON.
- ★ Operate your BATTLE STATION right or left by CONTROL LEVER. And shoot assulting enemies.
- ★ Your BATTLE STATION gradually sails up in the sky.
- ★ 7 enemy ships are all destroyed, the 1st round is over. When the 8th round is over, return to the 1st round.
- ★ When each round is over, if the cities on the ground remains, add the number of cities for your score as BONUS points.
- ★ All your reserved BATTLE STATIONS are destroyed, the GAME is over.

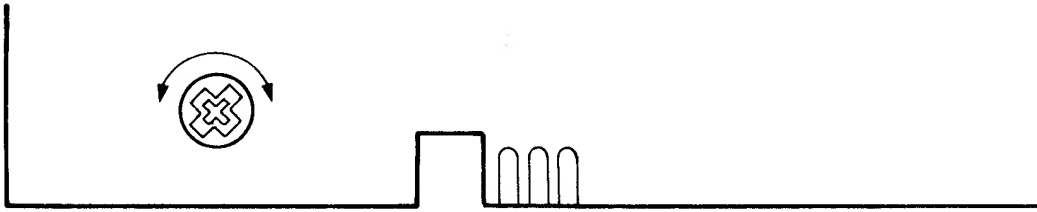
SCORE	
<div>ASTEROIDS</div>  <div>PARA-BOMB</div> 	
   	
ENEMY SHIPS ALL ARE 10 PTS.	REMAINING CITIES EACH 50 PTS.

4. OPERATIONAL INSTRUCTIONS

- Be sure to turn off the power switch before working on the machine.
- Avoid momentarily pushing in or pulling out the power cord plug.
- Even when it is found that the solid-state module is apparently out of order, do not check for the circuit by means of a tester, etc. since the voltage developed within the tester, etc. may destroy the IC unit.
- When carrying the machine about, be careful not to drag or drop it so as to protect the CRT of its TV set.
- Be sure to use rated fuses.
- Since there are high-tension parts on the base board and in the interior of the TV set, never touch such parts (this rule, however, does not apply to the manufacturer's servicing engineers).

OPERATER'S OPTION

1. AUDIO VOLUME ADJUSTMENT



2. OPTION SWITCH SETTINGS

FUNCTION	DIP SWITCH					FUTURE
	#1	#2	#3	#4	#5	
DIFFICULTY	OFF ON					DIFFICULT EASY
COIN OPERATE (CHUTE 1)		OFF ON OFF ON	OFF OFF ON ON			1 GAME/1 COIN 1 GAME/2 COINS 1 GAME/3 COINS 1 GAME/4 COINS
COIN OPERATE (CHUTE 2)				OFF ON OFF ON	OFF OFF ON ON	1 GAME/1 COIN 2 GAMES/1 COIN 3 GAMES/1 COIN 6 GAMES/1 COIN

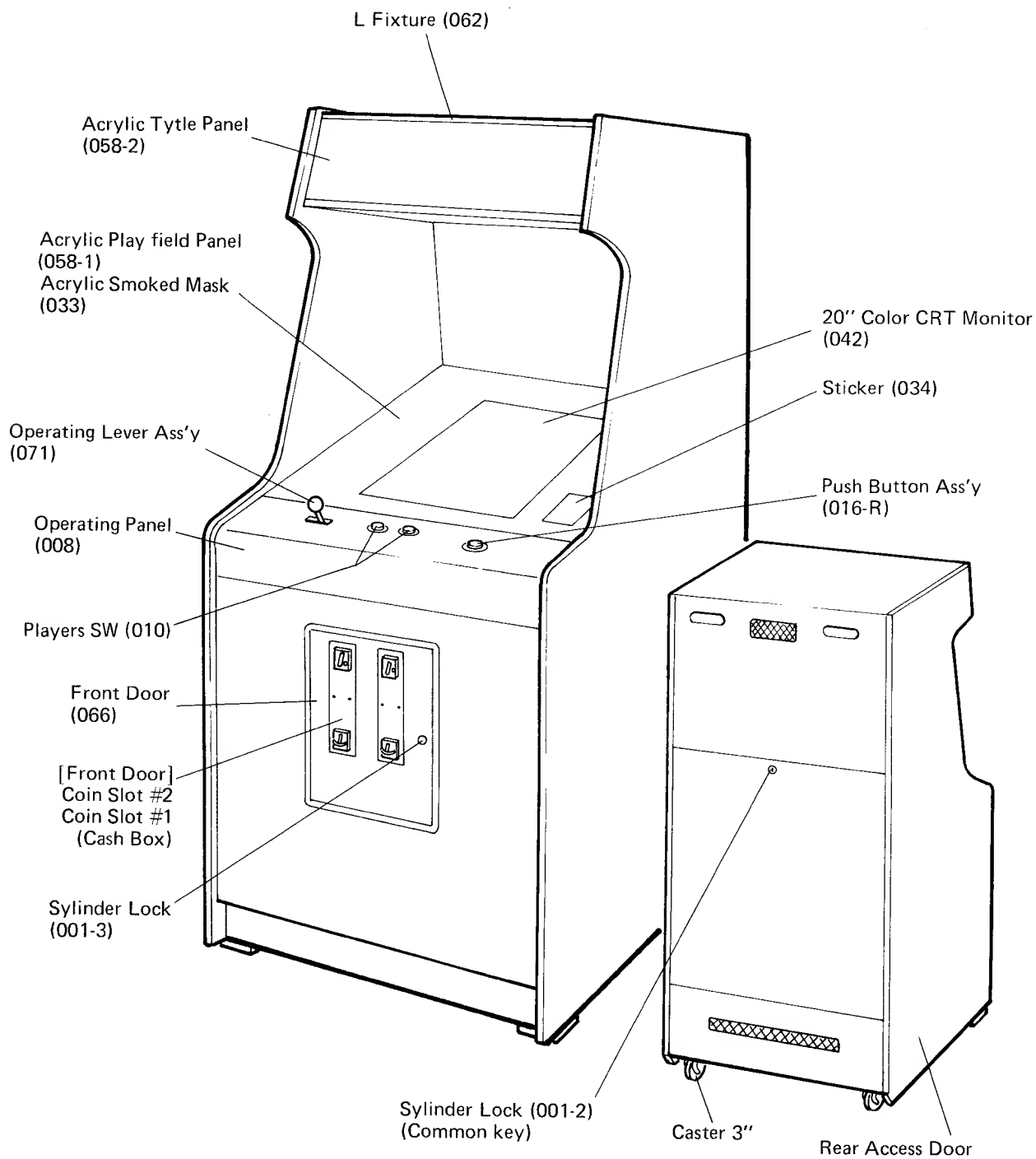
June 09/81 Add wiring from #1 to include
#2 - % both vend on #1 setting

5. TROUBLESHOOTING

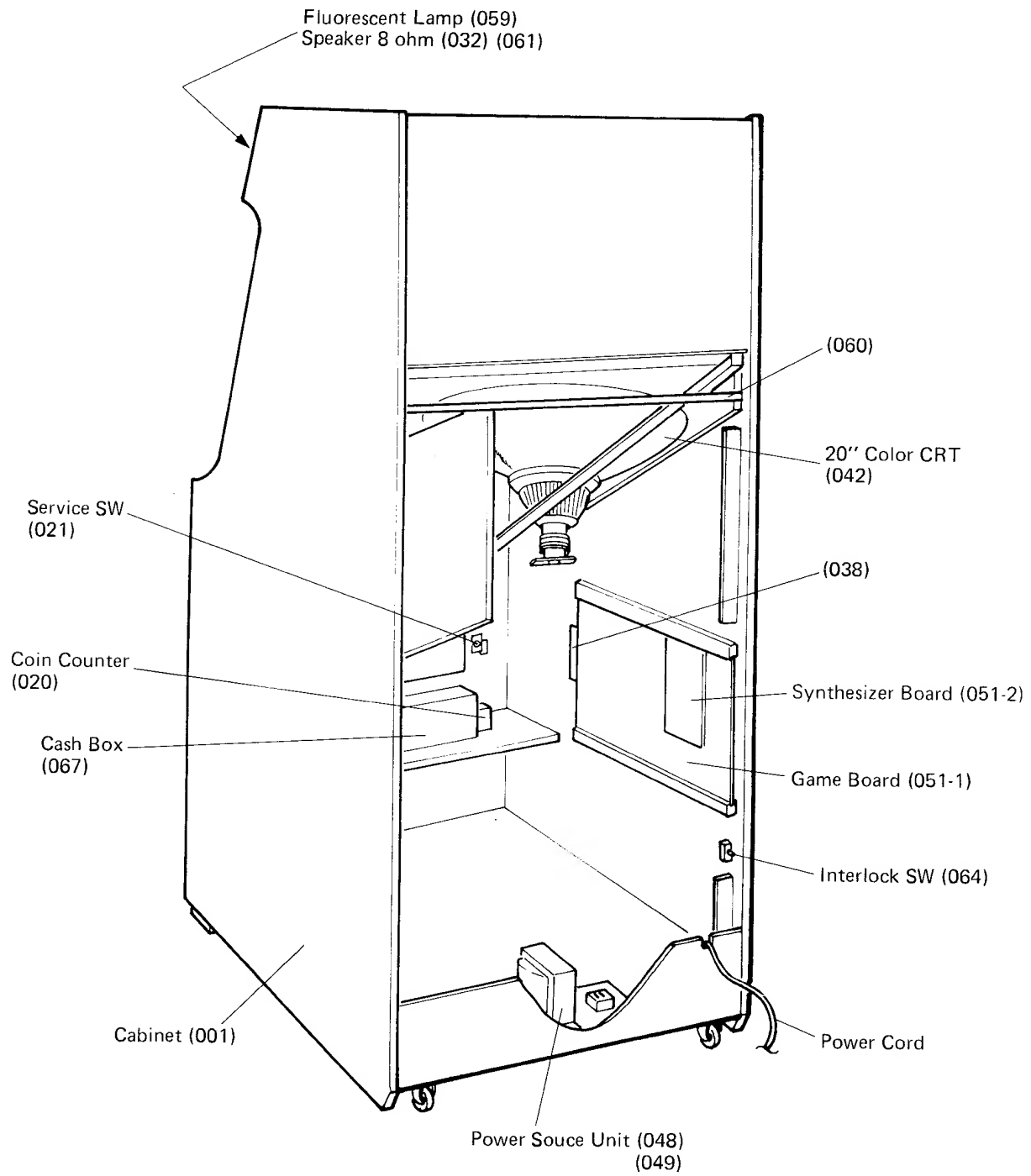
- Before considering some phenomenon as a trouble, confirm the matters listed below and then contact your dealer.
- The video game machine is broadly divided as to electrical component into four sections, namely, the minitor section, game PCB, operating section and power source section, which are connected with one another by wiring. If any one of them develops a trouble the game machine as a whole will not work normally. When you think that there is something wrong with the machine, check for the machine just for a little while before consulting your dealer since an apparent trouble may sometimes be caused by a trifling mistake or misunderstanding which can be remedied by a modicum of repairs.
- When the machine has developed any trouble, it must first be found out which part of the four sections and the wiring is malfunctioning. When you have guessed the malfunctioning part, check for each section. If the checked part shows no abnormal signs, check for other parts related to it, too.
- Is the fuse not blown ? (Be sure to use the indicated fuse. If a renewal fuse is also blown, then the other part is out of order.)
- Is the connector unfirmly contacted or disconnected ? Since connector's poor contact is conceivable in all trouble cases thoroughly check the connector for contact condition (Be sure to turn the power off before mounting or demounting the connector.)
- Sometimes normal images cannot be produced despite turning ON the power cord plug. This can sometimes be corrected by setting the control circuit. So, repeat turning ON and OFF the power a few times.
- When checking for the meters, switches, etc. by means of a circuit tester, be sure to pull out the IC board connector.

6. PARTS DIAGRAM

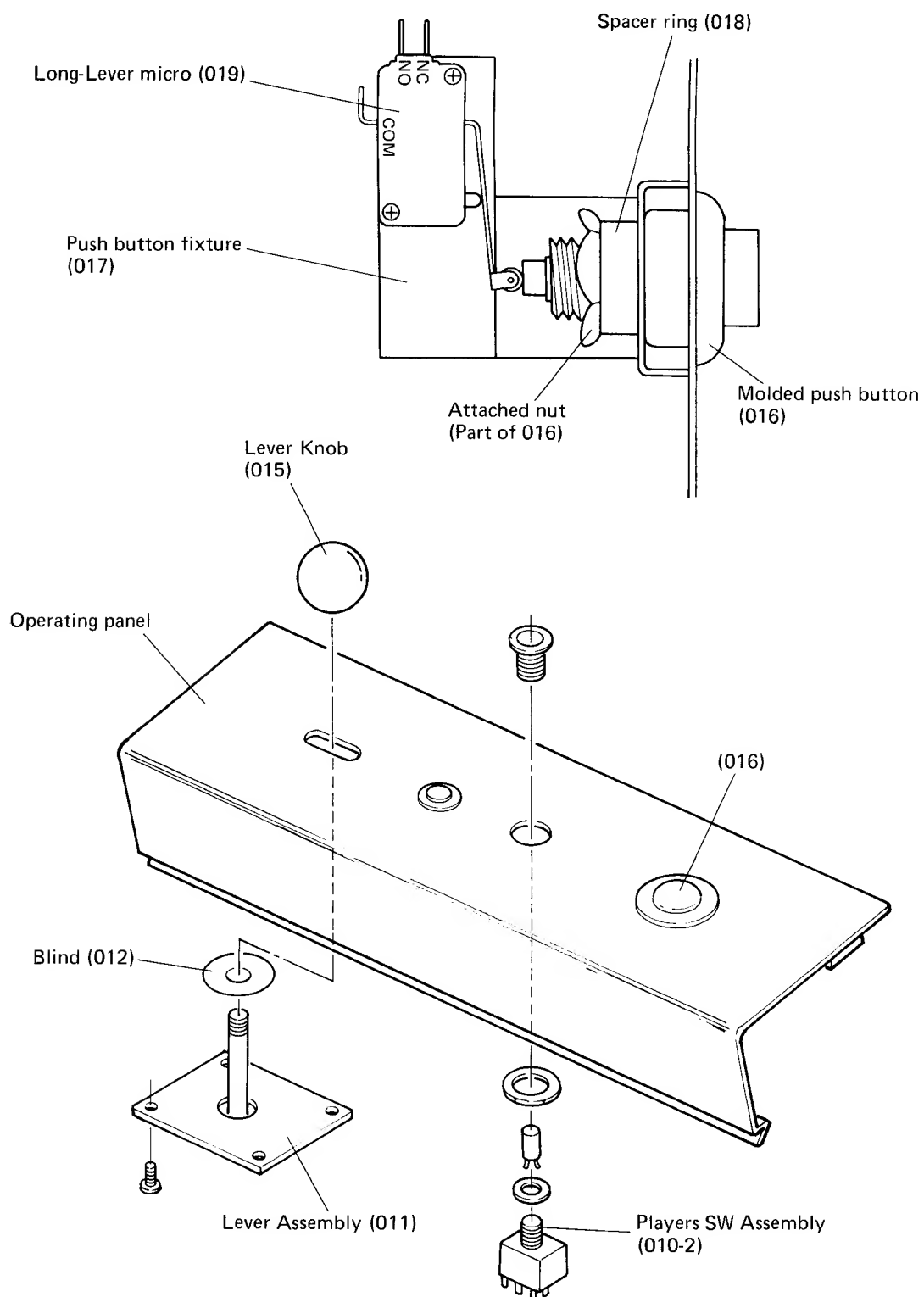
• OUTSIDE VIEW



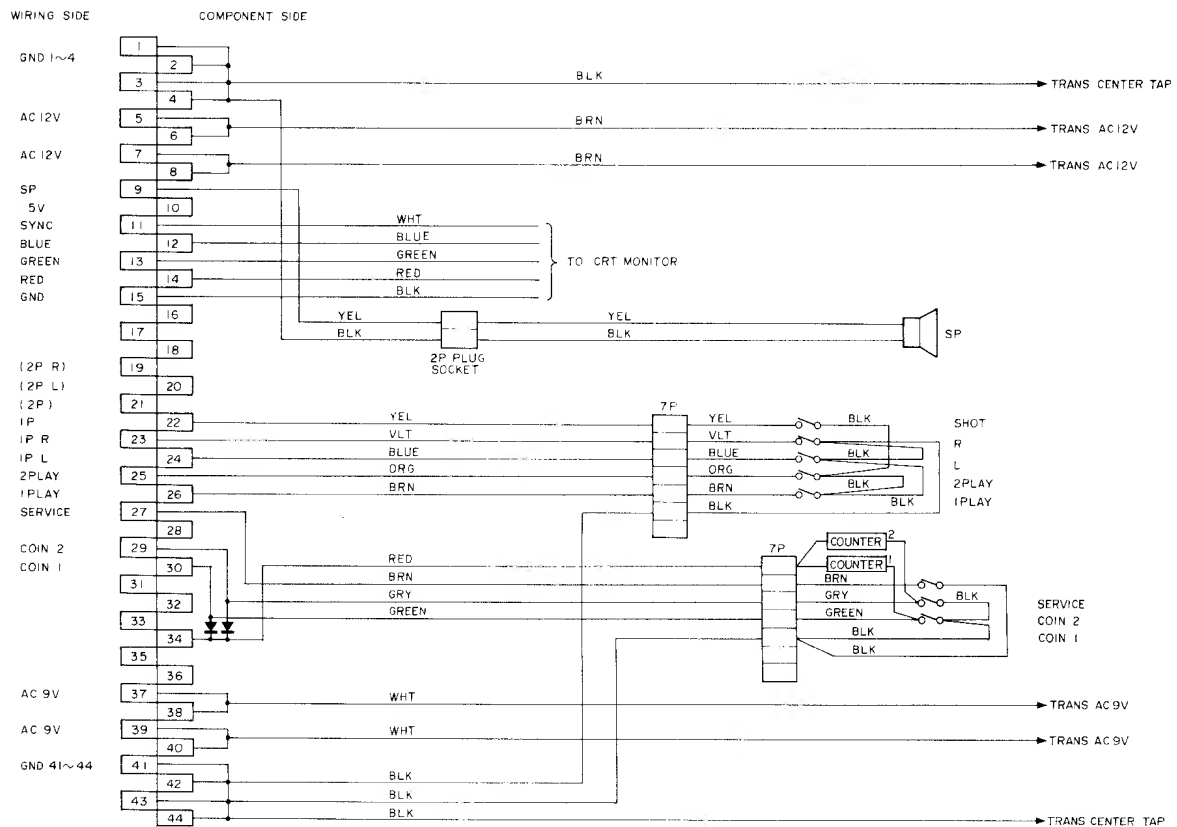
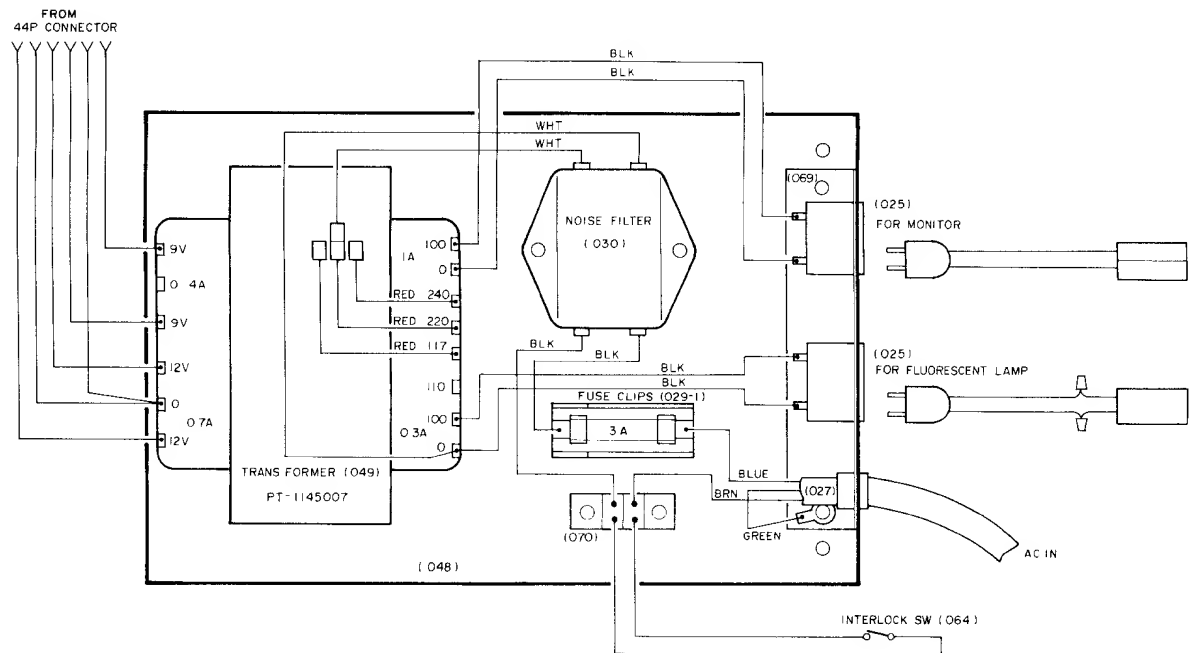
• INSIDE VIEW



• CONTROL LEVER ASSEMBLY



• WIRING DIAGRAM



7. PARTS LIST

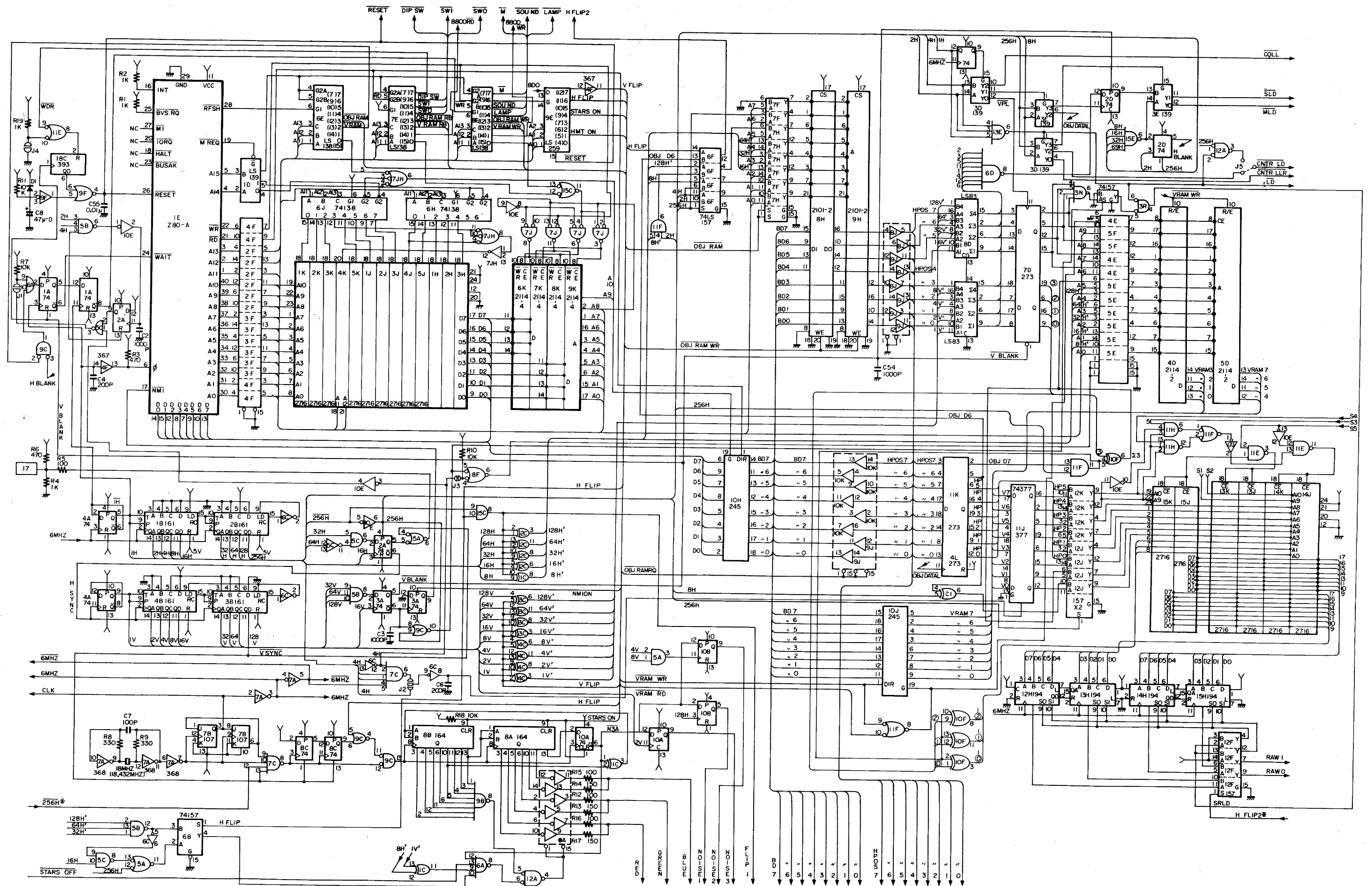
Item No.	Nomenclature	Description	Quantity	Remarks
001	Cabinet	Type 6500	1	Coinage specified
001-2	Sylinder lock & key	(Common key)	1	
001-3	Sylinder lock & key	(Safe key)	1	
006	Coin mechanism		2	
008	Operating panel		1	
010-2	Player's SW	Round type	2	
012	Blind (black paper)	10.5 ϕ -40 ϕ	1	
015	Lever knob	35 ϕ black	1	
016-R	Molded push button ass'y		1	
016	Molded push button		1	
017	Push button fixture	(Upright)	1	
018	Spacer ring		1	
019	Long-lever micro SW		1	
020	Coin counter	6VDC 6digit	2	
021	Service SW	Micro type	1	
022	Service SW fixture		1	
025	AC Outlet receptacle		2	
027	Cord bush		1	
029-1	Fuse clips		1	
030	Noise filter		1	
031	3A Fuse	6 ϕ glass cartridge	1	
032	Speaker	6-8" 8 ohm	1	
033	Acrylic smoke	(Blue)	1	
034	Play instruction sticker		1	
038	44p Edge connector	4 mm pitch	1	
042	20" Color CRT monitor	Toei	1	Insulated; with signal cable & power cord
042-1	Signal lead cable	For monitor	1	
042-2	Power cord	For monitor	1	
044	7p relay plug & socket		2	
045	Triangle ideal		4	
048	Power source board ass'y		1	
049	Set down transformer		1	
051	Game PCB		1 set	
051-1	Main (MPU) PC board		1	
051-2	Voice synthesizer board		1	
058-1	Playfield panel	Silk printed	1	
058-2	Tile panel	Silk printed	1	
059	Fluorescent lamp ass'y	AC 100V 10W	1	
060	Monitor L fixture		2	
061	Mesh plate	For speaker	1	
062	L fixture	For tile panel	2	

Item No.	Nomenclature	Description	Quantity	Remarks
064	Interlock SW		1	
065	Interlock SW fixture		1	
066	Front door		1	
067	Cash box		1	
068	Cash box receptacle		1	
069	Power source board fixture		1	
070	2p terminal board		1	
071	Operating lever chassis		1	
071-1	Spacer		2	
071-2	Plate spring		4	
071-3	Handling lever		1	
071-4	Shaft		1	
071-5	Lever pin		1	
071-6	U-ring		1	
071-7	R-ring		1	
072	Escutcheon (black paper)		1	
073	Patching lock		2	
083	Diode	Class 1A (10D-1)	2	
084	2p relay plug & socket		1	

B C D
 E F G H
 I

B C A
 P D B

• C.P.U BOARD SCHEMATICS-1 *SPACE BATTLE* (MODEL SB-002U)



SPACE BATTLE (MODEL SB-002U)

